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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHAWAN, SHEELA C

ART UNIT PAPER NUMBER

2624

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/795,777	JEONG ET AL.	
	Examiner	Art Unit	
	Sheela C. Chawan	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 3-13 and 17-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. Examiner considered the information disclosure statement (IDS) submitted on 5/26/04.

Drawings

3. The Examiner has approved drawings filed on 3/8/04.

Claim Rejections - 35 USC § 112, sixth paragraph

4. Claim 14 is rejected under 35 U.S.C. 112, sixth paragraph, because the "means for" or "step for" must be modified by functional language.

In claim 14, line 2, "an angle control means" should be explain by the "means or" or "step for" must be modified by functional language.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berestov (US. 6,671,399 B1), in view of Cox (US. 5,383,013).

As to claim 1, Berestov discloses a real-time three-dimensional image processing (abstract, column 1, lines 21- 40) system comprising:

an optical axis control means for controlling an optical axis angle of left (fig 1, element 110, corresponds to left image) and right (fig 1a and 1b, element 120) cameras by far and near distances (column 1, lines 21- 39, column 4, lines 51-60) of a subject (column 3, lines 1- 9);

an image processing unit for temporarily storing digital image signals of the left and right cameras and converting an analogue image signal into a digital, thereby respectively outputting the digital image signals (column 5, lines 33- 65).

first (fig 1, element 110, corresponds to left image, which is also know as first memory device) and second (fig 1a and 1b, element 120, which is know as second

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memory device) memory devices for alternately storing the decision value (column 8, lines 48- 59).

Berestov is silent about an image matching unit for calculating a decision value representing a minimum matching cost from the left and right digital image signals and then for outputting a disparity value according to the decision value.

Cox discloses stereoscopic computer vision system. The system comprises of an image-matching unit for calculating a decision value representing a minimum matching cost from the left and right digital image signals and then for outputting a disparity value according to the decision value (column 4, lines 22-30, column 7, lines 40- 52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Berestov to include an image matching unit for calculating a decision value representing a minimum matching cost from the left and right digital image signals and then for outputting a disparity value according to the decision value. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Berestov by the teaching of Cox in order to determine matching of features in two views depends on measuring the cost of various matches to determine the set of matches of minimum cost. This set of matches then is treated as the correct set of correspondences. The novel algorithm involves first deriving the cost of either matching two features or declaring a feature occluded, after that there is derived a global cost that is then minimized to form the best set of matches (as suggested by Cox at column 4, lines 22-30).

As to claim 2, Berestov discloses the system comprising a display means for

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displaying image that processed in accordance with the disparity value (column 8, lines 27- 33).

As to claim 15, see the rejection of claim 1 above.

As to claim 16, see the rejection of claim 1 above.

Allowable Subject Matter

6. Claims 3-13 and 17-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other prior art cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Onda (US.6,125,198) discloses method of matching stereo images and method of measuring disparity between these items.

Anderson et al., (US.5,179,441) discloses near real-time stereo vision system.

Palm et al., (US.6,326,995 B1) discloses methods and apparatus for zooming during capture and reproduction of 3-dimensional images.

Berestov et al., (US. 6,714,672 B1) discloses automated stereo funds evaluation.

Melen (US.6,674,892 B1) discloses correction an epipolar axis for skew and offset.

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Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheela Chawan
Patent Examiner
Group Art Unit 2624
July 19, 2006


SHEELA CHAWAN
PRIMARY EXAMINER